

10/7/3, 861
L200K 12/15/06

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(FILE 'HOME' ENTERED AT 13:56:40 ON 15 DEC 2006)

FILE 'BIOSIS, CAPLUS, EMBASE, MEDLINE, JAPIO' ENTERED AT 13:56:55 ON 15
DEC 2006

L1	1843 S CY3 AND CY5
L2	33 S L1 AND REVIEW?
L3	75 S L1 AND PH
L4	62 S L1 AND CHARGE?
L5	5 S L3 AND L4
L6	2 DUPLICATE REMOVE L5 (3 DUPLICATES REMOVED)
L7	25 S L1 AND PD<1996
L8	10 DUPLICATE REMOVE L7 (15 DUPLICATES REMOVED)

=>

AN 1993:142766 CAPLUS
DN 118:142766
ED Entered STN: 13 Apr 1993
TI Cyanine dye labeling reagents: Sulfoindocyanine succinimidyl esters
AU Mujumdar, Ratnakar B.; Ernst, Lauren A.; Mujumdar, Swati R.; Lewis, Christopher J.; Waggoner, Alan S.
CS Dep. Biol. Sci., Carnegie Mellon Univ., Pittsburgh, PA, 15213, USA
SO Bioconjugate Chemistry (1993), 4(2), 105-11
CODEN: BCCHES; ISSN: 1043-1802
DT Journal
LA English
CC 9-5 (Biochemical Methods)
AB The synthesis and properties of a series of new fluorescent labeling reagents based on sulfoindocyanine dyes are described. They contain succinimidyl ester reactive groups and can be readily conjugated to antibodies, avidin, DNA, lipids, polymers, and other amino-group-containing materials. The labeling reagents are water soluble, pH insensitive, and show much reduced dye aggregation under labeling conditions. One of the reagents, Cy3, can be excited with the 488-, 514-, and 532-nm laser lines and is optimally excited with the 546-nm mercury arc line. Another, Cy5, can be excited with the 633-nm HeNe and 647-nm Kr laser lines available with many flow cytometers and confocal laser-scanning microscopes. New laser diodes emitting near 650 nm should also be excellent excitation sources for Cy5.
ST sulfoindocyanine succinimidyl ester fluorescent label; cyanine dye labeling reagent biochem
IT Antibodies
Proteins, reactions
RL: ANST (Analytical study)
(labeling of, with sulfoindocyanine dyes)
IT Fluorescent substances
(sulfoindocyanine dye-based, prepn of, for biochem.)
IT Dyes, cyanine
(sulfoindocyanine succinimidyl esters, preparation of, for biochem.)
IT Immunoglobulins
RL: ANST (Analytical study)
(G, labeling of, with sulfoindocyanine dyes)
IT 146368-14-1 146368-15-2 146368-16-3 146397-20-8
RL: ANST (Analytical study)
(as cyanine dye labeling reagent for biochem.)
IT 146368-17-4 146368-18-5
RL: ANST (Analytical study)
(condensation of, with carboxypentynyltrimethylindoleninium sulfonate)
IT 74124-79-1, Disuccinimidyl carbonate
RL: ANST (Analytical study)
(in succinimidyl esters of carboxyalkylcyanine dyes preparation)
IT 146368-10-7P 146368-11-8P 146368-12-9P 146368-13-0P 146397-18-4P 146397-19-5P
RL: PREP (Preparation)
(preparation of, as cyanine dye labeling reagent for biochem.)
IT 146368-09-4P 146397-21-9P
RL: PREP (Preparation)
(preparation of, as intermediate for preparation of cyanine dye labeling reagent)
IT 76588-81-3P 132557-72-3P 146368-07-2P 146368-08-3P
RL: PREP (Preparation)
(preparation of, as intermediate for preparation of sulfocyanine dye)
IT 146397-17-3P
RL: PREP (Preparation)
(preparation of, for biochem. applications)
IT 122-51-0, Triethylorthoformate 51143-35-2, Glutaconaldehyde dianil hydrochloride
RL: RCT (Reactant); RACT (Reactant or reagent)

(reaction of, with carboxypentynyltrimethylindoleninium sulfonate)
IT 51143-32-9, Malonaldehyde dianil hydrochloride
RL: RCT (Reactant); RACT (Reactant or reagent)
(reaction of, with ethyltrimethylindoleninium sulfonate)
IT 563-80-4, 3-Methyl-2-butanone
RL: RCT (Reactant); RACT (Reactant or reagent)
(reaction of, with hydrazinobenzenesulfonic acid)
IT 98-71-5, p-Hydrazinobenzenesulfonic acid
RL: RCT (Reactant); RACT (Reactant or reagent)
(reaction of, with methylbutanone)
IT 75-03-6, Ethyl iodide 1633-83-6 4224-70-8, 6-Bromohexanoic acid
RL: RCT (Reactant); RACT (Reactant or reagent)
(reaction of, with potassium salt of trimethylindoleninium sulfonate)
IT 622-15-1, N,N'-Diphenylformamidine
RL: RCT (Reactant); RACT (Reactant or reagent)
(reaction of, with quaternary salt of indolenine)

ANSWER 8 OF 10 BIOSIS COPYRIGHT (c) 2006 The Thomson Corporation on STN
 DUPLICATE 7

AN 1993:407576 BIOSIS
 DN PREV199396073301

TI A novel fluorescence ratiometric method confirms the low solvent viscosity
 of the cytoplasm.

AU Luby-Phelps, Katherine [Reprint author]; Mujumdar, Swati; Mujumdar,
 Ratnakar B.; Ernst, Lauren A.; Galbraith, William; Waggoner, Alan S.
 CS Dep. Physiol., Univ. Tex. Southwestern Med. Cent., 5323 Harry Hines Blvd.,
 Dallas, TX 75235-9040, USA
 SO Biophysical Journal, (1993) Vol. 65, No. 1, pp. 236-242.
 CODEN: BIOJAU. ISSN: 0006-3495.

DT Article
 LA English
 ED Entered STN: 8 Sep 1993
 Last Updated on STN: 8 Sep 1993

AB Two homologous indocyanine dyes, Cy3.18 and Cy5.18,
 can be used as a ratio pair for fluorometric determination of solvent
 viscosity. Succinimidyl ester derivatives of these dyes can be attached
 to inert carrier macromolecules, such as Ficoll 70, for measurement of
 intracellular or intravesicular solvent viscosity. When the viscosity of
 the solvent was varied by various methods, the fluorescence intensity
 ratio (Cy3/Cy5) in a mixture of Cy3
 .18-Ficoll 70 (Cy3F70) and Cy5.18-Ficoll 70 (Cy5F70) in solution
 was found to be solely a function of solvent viscosity and was insensitive
 to other solvent parameters such as dielectric constant, temperature, and
 the ability of the solvent to form hydrogen bonds. Most important, it was
 insensitive to the presence of large macromolecules, such as proteins,
 which increase the shear viscosity but have little effect on solvent
 viscosity. Following microinjection into the cytoplasm of living tissue
 culture cells, no binding of Cy3F70 or Cy5F70 to intracellular components
 was detected by fluorescence recovery after photobleaching. Fluorescence
 intensity ratio imaging of Cy3F70 and Cy5F70 in nonmotile interphase CV1
 and PtK-1 cells showed that the solvent viscosity of cytoplasm was not
 significantly different from water and showed no spatial variation.

CC Microscopy - Cytology and cytochemistry 01054
 Cytology - Animal 02506
 Biophysics - General 10502
 Biophysics - Methods and techniques 10504

IT Major Concepts
 Biochemistry and Molecular Biophysics; Cell Biology; Methods and
 Techniques

IT Miscellaneous Descriptors
 CONNEXON; LIPID MEMBRANE; LIVER; MEMBRANE CHANNEL; ULTRASTRUCTURE

ORGN Classifier
 Cercopithecidae 86205
 Super Taxa
 Primates; Mammalia; Vertebrata; Chordata; Animalia
 Organism Name
 Cercopithecidae
 Taxa Notes
 Animals, Chordates, Mammals, Nonhuman Mammals, Nonhuman Vertebrates,
 Nonhuman Primates, Primates, Vertebrates

ORGN Classifier
 Heteromyidae 86360
 Super Taxa
 Rodentia; Mammalia; Vertebrata; Chordata; Animalia
 Organism Name
 Heteromyidae
 Taxa Notes
 Animals, Chordates, Mammals, Nonhuman Vertebrates, Nonhuman Mammals,
 Rodents, Vertebrates

ORGN Classifier
 Muridae 86375

Super Taxa

Rodentia; Mammalia; Vertebrata; Chordata; Animalia

Organism Name

rat

Taxa Notes

Animals, Chordates, Mammals, Nonhuman Vertebrates, Nonhuman Mammals,
Rodents, Vertebrates

ANSWER 4 OF 10 EMBASE COPYRIGHT (c) 2006 Elsevier B.V. All rights reserved on STN
DUPLICATE 4

AN 94353286 EMBASE
DN 1994353286
TI Double-label immunofluorescence with the laser scanning confocal microscope using cyanine dyes.
AU Sargent P.B.
CS Department of Stomatology, University of California, San Francisco, CA 94143, United States
SO NeuroImage, (1994) Vol. 1, No. 4, pp. 288-295...
ISSN: 1053-8119 CODEN: NEIMEF
CY United States
DT Journal; Article
FS 001 Anatomy, Anthropology, Embryology and Histology
002 Physiology
008 Neurology and Neurosurgery
LA English
SL English
ED Entered STN: 21 Dec 1994
Last Updated on STN: 21 Dec 1994
AB The laser scanning confocal microscope, when used with the krypton-argon ion laser, is well suited for the simultaneous detection of pairs of antigens by immunofluorescence. Traditionally, double-label studies have utilized secondary antibodies conjugated to fluorescein isothiocyanate (FITC), excited by the 488-nm line (blue), and to tetramethyl rhodamine isothiocyanate or Texas Red, excited by the 568-nm line (yellow). However, the use of fluorophores excited by the 488 nm line produces unsatisfactory results when tissue contains low wavelength-excitable autofluorescence. In the amphibian cardiac ganglion, for example, autofluorescent granules within parasympathetic neurons obscure cell surface-derived signals and prevent one from analyzing the relative position of acetylcholine receptor clusters and synaptic boutons by double-label immunofluorescence. This problem has been solved by using cyanine 3.18 (Cy3)- and cyanine 5.18 (Cy5)-conjugated secondary antibodies, which are excited efficiently by the 568-nm (yellow) and the 647-nm (red) lines and which emit in the orange/red and in the far-red, respectively, and thus by avoiding the 488-nm line altogether. The resulting images are as good or better than those obtained with FITC and Texas Red, even without consideration of autofluorescence.
CT Medical Descriptors:
*ganglion
*heart
animal cell
animal tissue
article
controlled study
frog
immunofluorescence
laser microscopy
priority journal
Drug Descriptors:
*cholinergic receptor

ANSWER 3 OF 10 BIOSIS COPYRIGHT (c) 2006 The Thomson Corporation on STN
 DUPLICATE 3

AN 1994:258686 BIOSIS
 DN PREV199497271686

TI Three-dimensional relationships between tumor cells and microcirculation with double cyanine immunolabeling, laser scanning confocal microscopy, and computer-assisted reconstruction: An alternative to cast corrosion preparations.

AU Rummelt, Volker; Gardner, Lynn M. G.; Folberg, Robert [Reprint author]; Beck, Steven; Knosp, Boyd; Moninger, Thomas O.; Moore, Kenneth C.

CS Univ. Iowa, Room 233 Med. Res. Cent., Iowa City, IA 52242-1182, USA

SO Journal of Histochemistry and Cytochemistry, (1994) Vol. 42, No. 5, pp. 681-686.
 CODEN: JHCYAS. ISSN: 0022-1554.

DT Article
 LA English
 ED Entered STN: 8 Jun 1994
 Last Updated on STN: 9 Jun 1994

AB The morphology of the microcirculation of uveal melanomas is a reliable marker of tumor progression. Scanning electron microscopy of cast corrosion preparations can generate three-dimensional views of these vascular patterns, but this technique sacrifices the tumor parenchyma. Formalin-fixed wet tissue sections 100-150 μ m thick from uveal melanomas were stained with the lectin Ulex europaeus agglutinin I (UEAI) and proliferating cell nuclear antigen (PCNA) to demonstrate simultaneously the tumor blood vessels and proliferating tumor cells. Indocarbocyanine (Cy3) was used as a fluorophore for UEAI and indodicarbocyanine (Cy5) was used for PCNA. Double labeled sections were examined with a laser scanning confocal microscope. Images of both stains were digitized at the same 5-gm intervals and each of the two images per interval was combined digitally to form one image. These combined images were visualized through voxel processing to study the relationship between melanoma cells expressing PCNA and various microcirculatory patterns. This technique produces images comparable to scanning electron microscopy of cast corrosion preparations while permitting simultaneous localization of melanoma cells expressing PCNA. The microcirculatory tree can be viewed from any perspective and the relationship between tumor cells and the tumor blood vessels can be studied concurrently in three dimensions. This technique is an alternative to cast corrosion preparations.

CC General biology - Information, documentation, retrieval and computer applications 00530
 Microscopy - Electron microscopy 01058
 Cytology - Human 02508
 Radiation biology - Radiation and isotope techniques 06504
 Anatomy and Histology - Microscopic and ultramicroscopic anatomy 11108
 Sense organs - General and methods 20001
 Sense organs - Pathology 20006
 Neoplasms - Pathology, clinical aspects and systemic effects 24004
 Neoplasms - Biochemistry 24006
 Immunology - General and methods 34502

IT Major Concepts
 Cell Biology; Computer Applications (Computational Biology); Immune System (Chemical Coordination and Homeostasis); Morphology; Oncology (Human Medicine, Medical Sciences); Radiology (Medical Sciences); Sense Organs (Sensory Reception)

IT Chemicals & Biochemicals
 CYANINE

IT Miscellaneous Descriptors
 ANALYTICAL METHOD; IMMUNOLOGIC METHOD; SCANNING ELECTRON MICROSCOPY; UVEAL MELANOMA

ORGN Classifier
 Hominidae 86215
 Super Taxa
 Primates; Mammalia; Vertebrata; Chordata; Animalia

Organism Name

human

Taxa Notes

Animals, Chordates, Humans, Mammals, Primates, Vertebrates

RN 523-42-2Q (CYANINE)

581-64-6Q (CYANINE)

ANSWER 5 OF 10 BIOSIS COPYRIGHT (c) 2006 The Thomson Corporation on STN
 DUPLICATE 5
 AN 1995:127361 BIOSIS
 DN PREV199598141661
 TI Imaging in the far-red with electronic light microscopy: Requirements and
 limitations.
 AU Cullander, C.
 CS Dep. Pharmacy, Pharmaceutical Chem., Univ. California, San Francisco, CA
 94143, USA
 SO Journal of Microscopy (Oxford), (1994) Vol. 176, No. 3, pp.
 281-286.
 CODEN: JMICAR. ISSN: 0022-2720.
 DT Article
 LA English
 ED Entered STN: 29 Mar 1995
 Last Updated on STN: 23 May 1995
 AB The acquisition of simultaneous dual confocal images with red and far-red
 light has both advantages (e.g. lower autofluorescence) and limitations.
 An understanding of these requisites is necessary to acquire high-quality
 images and to avoid the misinterpretation of experimental data. The poor
 detection of far-red light mandates a high optical transfer efficiency for
 the system, thus the transmittance of the objective lens and its axial and
 lateral chromatic aberration in the far-red are important factors for
 consideration. This technical note is an attempt to 'demystify' the
 process of filter set design for confocal microscopy by discussing the
 considerations that went into the construction of a filter set for use
 with the reagents cyanine 3.18 (Cy3) and cyanine 5.18 (Cy5), and thus to encourage users to look beyond the multi-purpose
 designs available commercially. The 568-nm laser line exciting Cy 3 is
 at its emission maximum, which limits the collectable Cy3
 fluorescence. High-transmission optical filters with sharp band pass
 cutoffs are thus desirable for maximum light throughput. Light path
 mirror efficiency rapidly degrades above 700 nm, but the loss of this
 portion of the Cy5 emission spectrum is acceptable since the
 fluorophore is very bright, and these very long wavelengths are also
 likely to introduce aberration. While resolution is decreased with
 far-red light, there is also greater penetration and less scattering, and
 it is thus possible to obtain high-quality images from deeper within the
 specimen. Although only one make and model of confocal microscope (the
 Bio-Rad MRC-600) is considered, similar considerations pertain to the
 design of filter sets for any confocal microscope that accommodates
 user-installed filters.
 CC Methods - Photography 01012
 Microscopy - General and special techniques 01052
 Mathematical biology and statistical methods 04500
 Radiation biology - Radiation and isotope techniques 06504
 Radiation biology - Radiation effects and protective measures 06506
 Biophysics - General 10502
 Biophysics - Methods and techniques 10504
 Biophysics - Bioengineering 10511
 External effects - Light and darkness 10604
 External effects - Electric, magnetic and gravitational phenomena 10610
 IT Major Concepts
 Biochemistry and Molecular Biophysics; Equipment, Apparatus, Devices
 and Instrumentation; Mathematical Biology (Computational Biology);
 Methods and Techniques; Radiation Biology; Radiology (Medical Sciences)
 IT Chemicals & Biochemicals
 CYANINE-3.18
 IT Miscellaneous Descriptors
 ABERRATION; CONFOCAL MICROSCOPY; CYANINE-3.18; CYANINE-5.18;
 FLUORESCENT REAGENTS; OPTICAL FILTERS; TRANSMITTANCE
 RN 146397-17-3 (CYANINE-3.18)
 144637-64-9 (CYANINE-3.18)

10/7/3, 861
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(FILE 'HOME' ENTERED AT 13:56:40 ON 15 DEC 2006)

FILE 'BIOSIS, CAPLUS, EMBASE, MEDLINE, JAPIO' ENTERED AT 13:56:55 ON 15
DEC 2006

L1 1843 S CY3 AND CY5
L2 33 S L1 AND REVIEW?
L3 75 S L1 AND PH
L4 62 S L1 AND CHARGE?
L5 5 S L3 AND L4
L6 2 DUPLICATE REMOVE L5 (3 DUPLICATES REMOVED)
L7 25 S L1 AND PD<1996
L8 10 DUPLICATE REMOVE L7 (15 DUPLICATES REMOVED)

=>

AN 1993:142766 CAPLUS
DN 118:142766
ED Entered STN: 13 Apr 1993
TI Cyanine dye labeling reagents: Sulfoindocyanine succinimidyl esters
AU Mujumdar, Ratnakar B.; Ernst, Lauren A.; Mujumdar, Swati R.; Lewis, Christopher J.; Waggoner, Alan S.
CS Dep. Biol. Sci., Carnegie Mellon Univ., Pittsburgh, PA, 15213, USA
SO Bioconjugate Chemistry (1993), 4(2), 105-11
CODEN: BCCHES; ISSN: 1043-1802
DT Journal
LA English
CC 9-5 (Biochemical Methods)
AB The synthesis and properties of a series of new fluorescent labeling reagents based on sulfoindocyanine dyes are described. They contain succinimidyl ester reactive groups and can be readily conjugated to antibodies, avidin, DNA, lipids, polymers, and other amino-group-containing materials. The labeling reagents are water soluble, pH insensitive, and show much reduced dye aggregation under labeling conditions. One of the reagents, Cy3, can be excited with the 488-, 514-, and 532-nm laser lines and is optimally excited with the 546-nm mercury arc line. Another, Cy5, can be excited with the 633-nm HeNe and 647-nm Kr laser lines available with many flow cytometers and confocal laser-scanning microscopes. New laser diodes emitting near 650 nm should also be excellent excitation sources for Cy5.
ST sulfoindocyanine succinimidyl ester fluorescent label; cyanine dye labeling reagent biochem
IT Antibodies
Proteins, reactions
RL: ANST (Analytical study)
(labeling of, with sulfoindocyanine dyes)
IT Fluorescent substances
(sulfoindocyanine dye-based, prepn of, for biochem.)
IT Dyes, cyanine
(sulfoindocyanine succinimidyl esters, preparation of, for biochem.)
IT Immunoglobulins
RL: ANST (Analytical study)
(G, labeling of, with sulfoindocyanine dyes)
IT 146368-14-1 146368-15-2 146368-16-3 146397-20-8
RL: ANST (Analytical study)
(as cyanine dye labeling reagent for biochem.)
IT 146368-17-4 146368-18-5
RL: ANST (Analytical study)
(condensation of, with carboxypentynyltrimethylindoleninium sulfonate)
IT 74124-79-1, Disuccinimidyl carbonate
RL: ANST (Analytical study)
(in succinimidyl esters of carboxyalkylcyanine dyes preparation)
IT 146368-10-7P 146368-11-8P 146368-12-9P 146368-13-0P 146397-18-4P 146397-19-5P
RL: PREP (Preparation)
(preparation of, as cyanine dye labeling reagent for biochem.)
IT 146368-09-4P 146397-21-9P
RL: PREP (Preparation)
(preparation of, as intermediate for preparation of cyanine dye labeling reagent)
IT 76588-81-3P 132557-72-3P 146368-07-2P 146368-08-3P
RL: PREP (Preparation)
(preparation of, as intermediate for preparation of sulfocyanine dye)
IT 146397-17-3P
RL: PREP (Preparation)
(preparation of, for biochem. applications)
IT 122-51-0, Triethylorthoformate 51143-35-2, Glutaconaldehyde dianil hydrochloride
RL: RCT (Reactant); RACT (Reactant or reagent)

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H. J. L.
12/15/06

(reaction of, with carboxypentynyltrimethylindoleninium sulfonate)
 IT 51143-32-9, Malonaldehyde dianil hydrochloride
 RL: RCT (Reactant); RACT (Reactant or reagent)
 (reaction of, with ethyltrimethylindoleninium sulfonate)
 IT 563-80-4, 3-Methyl-2-butanone
 RL: RCT (Reactant); RACT (Reactant or reagent)
 (reaction of, with hydrazinobenzenesulfonic acid)
 IT 98-71-5, p-Hydrazinobenzenesulfonic acid
 RL: RCT (Reactant); RACT (Reactant or reagent)
 (reaction of, with methylbutanone)
 IT 75-03-6, Ethyl iodide 1633-83-6 4224-70-8, 6-Bromohexanoic acid
 RL: RCT (Reactant); RACT (Reactant or reagent)
 (reaction of, with potassium salt of trimethylindoleninium sulfonate)
 IT 622-15-1, N,N'-Diphenylformamidine
 RL: RCT (Reactant); RACT (Reactant or reagent)
 (reaction of, with quaternary salt of indolenine)

ANSWER 8 OF 10 BIOSIS COPYRIGHT (c) 2006 The Thomson Corporation on STN
 DUPLICATE 7
 AN 1993:407576 BIOSIS
 DN PREV199396073301
 TI A novel fluorescence ratiometric method confirms the low solvent viscosity
 of the cytoplasm.
 AU Luby-Phelps, Katherine [Reprint author]; Mujumdar, Swati; Mujumdar,
 Ratnakar B.; Ernst, Lauren A.; Galbraith, William; Waggoner, Alan S.
 CS Dep. Physiol., Univ. Tex. Southwestern Med. Cent., 5323 Harry Hines Blvd.,
 Dallas, TX 75235-9040, USA
 SO Biophysical Journal, (1993) Vol. 65, No. 1, pp. 236-242.
 CODEN: BIOJAU. ISSN: 0006-3495.
 DT Article
 LA English
 ED Entered STN: 8 Sep 1993
 Last Updated on STN: 8 Sep 1993
 AB Two homologous indocyanine dyes, Cy3.18 and Cy5.18,
 can be used as a ratio pair for fluorometric determination of solvent
 viscosity. Succinimidyl ester derivatives of these dyes can be attached
 to inert carrier macromolecules, such as Ficoll 70, for measurement of
 intracellular or intravesicular solvent viscosity. When the viscosity of
 the solvent was varied by various methods, the fluorescence intensity
 ratio (Cy3/Cy5) in a mixture of Cy3
 .18-Ficoll 70 (Cy3F70) and Cy5.18-Ficoll 70 (Cy5F70) in solution
 was found to be solely a function of solvent viscosity and was insensitive
 to other solvent parameters such as dielectric constant, temperature, and
 the ability of the solvent to form hydrogen bonds. Most important, it was
 insensitive to the presence of large macromolecules, such as proteins,
 which increase the shear viscosity but have little effect on solvent
 viscosity. Following microinjection into the cytoplasm of living tissue
 culture cells, no binding of Cy3F70 or Cy5F70 to intracellular components
 was detected by fluorescence recovery after photobleaching. Fluorescence
 intensity ratio imaging of Cy3F70 and Cy5F70 in nonmotile interphase CV1
 and PtK-1 cells showed that the solvent viscosity of cytoplasm was not
 significantly different from water and showed no spatial variation.
 CC Microscopy - Cytology and cytochemistry 01054
 Cytology - Animal 02506
 Biophysics - General 10502
 Biophysics - Methods and techniques 10504
 IT Major Concepts
 Biochemistry and Molecular Biophysics; Cell Biology; Methods and
 Techniques
 IT Miscellaneous Descriptors
 CONNEXON; LIPID MEMBRANE; LIVER; MEMBRANE CHANNEL; ULTRASTRUCTURE
 ORGN Classifier
 Cercopithecidae 86205
 Super Taxa
 Primates; Mammalia; Vertebrata; Chordata; Animalia
 Organism Name
 Cercopithecidae
 Taxa Notes
 Animals, Chordates, Mammals, Nonhuman Mammals, Nonhuman Vertebrates,
 Nonhuman Primates, Primates, Vertebrates
 ORGN Classifier
 Heteromyidae 86360
 Super Taxa
 Rodentia; Mammalia; Vertebrata; Chordata; Animalia
 Organism Name
 Heteromyidae
 Taxa Notes
 Animals, Chordates, Mammals, Nonhuman Vertebrates, Nonhuman Mammals,
 Rodents, Vertebrates
 ORGN Classifier
 Muridae 86375

Super Taxa

Rodentia; Mammalia; Vertebrata; Chordata; Animalia

Organism Name

rat

Taxa Notes

Animals, Chordates, Mammals, Nonhuman Vertebrates, Nonhuman Mammals,
Rodents, Vertebrates

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 reserved on STN
 DUPLICATE 4

AN 94353286 EMBASE
 DN 1994353286
 TI Double-label immunofluorescence with the laser scanning confocal microscope using cyanine dyes.
 AU Sargent P.B.
 CS Department of Stomatology, University of California, San Francisco, CA 94143, United States
 SO NeuroImage, (1994) Vol. 1, No. 4, pp. 288-295. .
 ISSN: 1053-8119 CODEN: NEIMEF
 CY United States
 DT Journal; Article
 FS 001 Anatomy, Anthropology, Embryology and Histology
 002 Physiology
 008 Neurology and Neurosurgery
 LA English
 SL English
 ED Entered STN: 21 Dec 1994
 Last Updated on STN: 21 Dec 1994

AB The laser scanning confocal microscope, when used with the krypton-argon ion laser, is well suited for the simultaneous detection of pairs of antigens by immunofluorescence. Traditionally, double-label studies have utilized secondary antibodies conjugated to fluorescein isothiocyanate (FITC), excited by the 488-nm line (blue), and to tetramethyl rhodamine isothiocyanate or Texas Red, excited by the 568-nm line (yellow). However, the use of fluorophores excited by the 488 nm line produces unsatisfactory results when tissue contains low wavelength-excitable autofluorescence. In the amphibian cardiac ganglion, for example, autofluorescent granules within parasympathetic neurons obscure cell surface-derived signals and prevent one from analyzing the relative position of acetylcholine receptor clusters and synaptic boutons by double-label immunofluorescence. This problem has been solved by using cyanine 3.18 (Cy3)- and cyanine 5.18 (Cy5)-conjugated secondary antibodies, which are excited efficiently by the 568-nm (yellow) and the 647-nm (red) lines and which emit in the orange/red and in the far-red, respectively, and thus by avoiding the 488-nm line altogether. The resulting images are as good or better than those obtained with FITC and Texas Red, even without consideration of autofluorescence.

CT Medical Descriptors:
 *ganglion
 *heart
 animal cell
 animal tissue
 article
 controlled study
 frog
 immunofluorescence
 laser microscopy
 priority journal
 Drug Descriptors:
 *cholinergic receptor

ANSWER 3 OF 10 BIOSIS COPYRIGHT (c) 2006 The Thomson Corporation on STN

DUPLICATE 3

AN 1994:258686 BIOSIS

DN PREV199497271686

TI Three-dimensional relationships between tumor cells and microcirculation with double cyanine immunolabeling, laser scanning confocal microscopy, and computer-assisted reconstruction: An alternative to cast corrosion preparations.

AU Rummelt, Volker; Gardner, Lynn M. G.; Folberg, Robert [Reprint author]; Beck, Steven; Knosp, Boyd; Moninger, Thomas O.; Moore, Kenneth C.

CS Univ. Iowa, Room 233 Med. Res. Cent., Iowa City, IA 52242-1182, USA

SO Journal of Histochemistry and Cytochemistry, (1994) Vol. 42, No. 5, pp. 681-686.

CODEN: JHCYAS. ISSN: 0022-1554.

DT Article

LA English

ED Entered STN: 8 Jun 1994

Last Updated on STN: 9 Jun 1994

AB The morphology of the microcirculation of uveal melanomas is a reliable marker of tumor progression. Scanning electron microscopy of cast corrosion preparations can generate three-dimensional views of these vascular patterns, but this technique sacrifices the tumor parenchyma. Formalin-fixed wet tissue sections 100-150 μ m thick from uveal melanomas were stained with the lectin Ulex europaeus agglutinin I (UEAI) and proliferating cell nuclear antigen (PCNA) to demonstrate simultaneously the tumor blood vessels and proliferating tumor cells. Indocarbocyanine (Cy3) was used as a fluorophore for UEAI and indodicarbocyanine (Cy5) was used for PCNA. Double labeled sections were examined with a laser scanning confocal microscope. Images of both stains were digitized at the same 5-gm intervals and each of the two images per interval was combined digitally to form one image. These combined images were visualized through voxel processing to study the relationship between melanoma cells expressing PCNA and various microcirculatory patterns. This technique produces images comparable to scanning electron microscopy of cast corrosion preparations while permitting simultaneous localization of melanoma cells expressing PCNA. The microcirculatory tree can be viewed from any perspective and the relationship between tumor cells and the tumor blood vessels can be studied concurrently in three dimensions. This technique is an alternative to cast corrosion preparations.

CC General biology - Information, documentation, retrieval and computer applications 00530

Microscopy - Electron microscopy 01058

Cytology - Human 02508

Radiation biology - Radiation and isotope techniques 06504

Anatomy and Histology - Microscopic and ultramicroscopic anatomy 11108

Sense organs - General and methods 20001

Sense organs - Pathology 20006

Neoplasms - Pathology, clinical aspects and systemic effects 24004

Neoplasms - Biochemistry 24006

Immunology - General and methods 34502

IT Major Concepts

Cell Biology; Computer Applications (Computational Biology); Immune System (Chemical Coordination and Homeostasis); Morphology; Oncology (Human Medicine, Medical Sciences); Radiology (Medical Sciences); Sense Organs (Sensory Reception)

IT Chemicals & Biochemicals

CYANINE

IT Miscellaneous Descriptors

ANALYTICAL METHOD; IMMUNOLOGIC METHOD; SCANNING ELECTRON MICROSCOPY; UVEAL MELANOMA

ORGN Classifier

Hominidae 86215

Super Taxa

Primates; Mammalia; Vertebrata; Chordata; Animalia

Q P501. H 523
✓ pulled
12/18/00

Organism Name

human

Taxa Notes

Animals, Chordates, Humans, Mammals, Primates, Vertebrates

RN

523-42-2Q (CYANINE)

581-64-6Q (CYANINE)

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DUPLICATE 5

AN 1995:127361 BIOSIS

DN PREV199598141661

TI Imaging in the far-red with electronic light microscopy: Requirements and limitations.

AU Cullander, C.

CS Dep. Pharmacy, Pharmaceutical Chem., Univ. California, San Francisco, CA 94143, USA

SO Journal of Microscopy (Oxford), (1994) Vol. 176, No. 3, pp. 281-286.

CODEN: JMICAR. ISSN: 0022-2720.

DT Article

LA English

ED Entered STN: 29 Mar 1995

Last Updated on STN: 23 May 1995

AB The acquisition of simultaneous dual confocal images with red and far-red light has both advantages (e.g. lower autofluorescence) and limitations. An understanding of these requisites is necessary to acquire high-quality images and to avoid the misinterpretation of experimental data. The poor detection of far-red light mandates a high optical transfer efficiency for the system, thus the transmittance of the objective lens and its axial and lateral chromatic aberration in the far-red are important factors for consideration. This technical note is an attempt to 'demystify' the process of filter set design for confocal microscopy by discussing the considerations that went into the construction of a filter set for use with the reagents cyanine 3.18 (Cy3) and cyanine 5.18 (Cy5), and thus to encourage users to look beyond the multi-purpose designs available commercially. The 568-nm laser line exciting Cy 3 is at its emission maximum, which limits the collectable Cy3 fluorescence. High-transmission optical filters with sharp band pass cutoffs are thus desirable for maximum light throughput. Light path mirror efficiency rapidly degrades above 700 nm, but the loss of this portion of the Cy5 emission spectrum is acceptable since the fluorophore is very bright, and these very long wavelengths are also likely to introduce aberration. While resolution is decreased with far-red light, there is also greater penetration and less scattering, and it is thus possible to obtain high-quality images from deeper within the specimen. Although only one make and model of confocal microscope (the Bio-Rad MRC-600) is considered, similar considerations pertain to the design of filter sets for any confocal microscope that accommodates user-installed filters.

CC Methods - Photography 01012

Microscopy - General and special techniques 01052

Mathematical biology and statistical methods 04500

Radiation biology - Radiation and isotope techniques 06504

Radiation biology - Radiation effects and protective measures 06506

Biophysics - General 10502

Biophysics - Methods and techniques 10504

Biophysics - Bioengineering 10511

External effects - Light and darkness 10604

External effects - Electric, magnetic and gravitational phenomena 10610

IT Major Concepts

Biochemistry and Molecular Biophysics; Equipment, Apparatus, Devices and Instrumentation; Mathematical Biology (Computational Biology); Methods and Techniques; Radiation Biology; Radiology (Medical Sciences)

IT Chemicals & Biochemicals

CYANINE-3.18

IT Miscellaneous Descriptors

ABERRATION; CONFOCAL MICROSCOPY; CYANINE-3.18; CYANINE-5.18; FLUORESCENT REAGENTS; OPTICAL FILTERS; TRANSMITTANCE

RN 146397-17-3 (CYANINE-3.18)

144637-64-9 (CYANINE-3.18)

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